STIC Search Report
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STIC Database Tracking Number: 138877

TO:	From:
Michael D Burkhart **Location: REM/2C84/2C70** **Art Unit: 1636** **Friday, December 10, 2004** **Case Serial Number: 10/018712**	**Paul Schulwitz** **Location: Biotech-Chem Library** **REM-1A65** **Phone: (571)272-2527** **paul.schulwitz@uspto.gov**

Search Notes

Examiner Burkhart,

See attached results.

If you have any questions about this search feel free to contact me at any time.

Thank you for using STIC search services!

Paul Schulwitz
Technical Information Specialist
STIC Biotech/Chem Library
(571)272-2527

STIC-Biotech/ChemLib 138877

From: Unknown@Unknown.com
Sent: Monday, November 29, 2004 4:40 PM
To: STIC-Biotech/ChemLib
Subject: Generic form response

ResponseHeader=Commercial Database Search Request

AccessDB#= _____

LogNumber= _____

Searcher= _____

SearcherPhone= _____

SearcherBranch= _____

MyDate=Mon Nov 29 16:39:35 EST 2004

submitto=Biotech01@uspto.gov

Name=Mike Burkhart

Empno=80346

Phone=571 272-2915

Artunit=AU 1636

Office=REM 2C84

Serialnum=10/018,712

PatClass=435/458

Earliest=6/16/1999

Format1=paper

Searchtopic=I'm looking for prior art regarding a method of using compounds for nucleic acid transfection (and art on the compounds). The basic structure of the compounds is found in claims 21, 32, and 36 of the application (I don't know how to transmit the structure in this format). Applicants provide a name for one compound, glucitol (claim 36). Broadly, the compounds are called "bolaamphiphiles" and "gemini compounds" or "gemini surfactants." One example of prior art (from the Int. Search Report) is Pestman, J. et al, 1997, Langmuir, Vol. 13: pgs.6857-6860. Fig. 1 of the Prestman reference illustrates some examples of the compound structure. I'm a bit out of my element here, my AU does not typically handle chemical structure searches, so, please let me know if I can be of further assistance. Thank you very much in advance,

Mike Burkhart

****
STAFF USE ONLY

Searcher:_____
Searcher Phone: 2-
Date Searcher Picked up:____
Date Completed:_____
Searcher Prep/Rev. Time:___
Online Time:_____

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Type of Search
NA Sequence: #_____
AA Sequence :#_____
Structure: #_____
Bibliographic:_____
Litigation:_____
Patent Family:_____
Other:_____

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Vendors and cost where applicable
STN:_____
DIALOG:_____
QUESTEL/ORBIT:_____
LEXIS/NEXIS:_____
SEQUENCE SYSTEM:_____
WWW/Internet:_____
Other(Specify):_____

Inventors

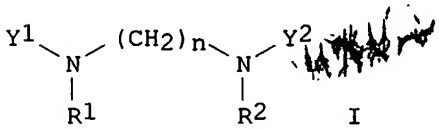
L8 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:900600 HCAPLUS
DOCUMENT NUMBER: 134:56913
ENTRY DATE: Entered STN: 22 Dec 2000
TITLE: Carbohydrate-based polyhydroxy diamine surfactants for gene transfer
INVENTOR(S): Camilleri, Patrick; Engberts, Jan Bernard Frederick Nicolaas; Fielden, Matthew Leigh; Kremer, Andreas
PATENT ASSIGNEE(S): Smithkline Beecham P.L.C., UK; University of Groningen
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C07C215-10
SECONDARY: C12N015-87
CLASSIFICATION: 33-7 (Carbohydrates)
Section cross-reference(s): 3, 9
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000076954	A1	20001221	WO 2000-GB2365	20000616 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1185502	A1	20020313	EP 2000-942195	20000616 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2003502307	T2	20030121	JP 2001-503814	20000616 <--
PRIORITY APPLN. INFO.:			GB 1999-14085 A	19990616
			WO 2000-GB2365 W	20000616 <--

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000076954	ICM	C07C215-10
	ICS	C12N015-87

OTHER SOURCE(S): MARPAT 134:56913
GRAPHIC IMAGE:



I

ABSTRACT:

The use of carbohydrate-based surfactant compds. having general formula (I) wherein Y1 and Y2, which may be the same or different, are carbohydrate groups; R1 and R2, which may be the same or different, are selected from: (a) hydrogen; (b) C(1-24) alkyl group; (c) C(1-24) alkyl carboxy group; or (d) a carbon chain of 2 to 24 carbon atoms having one or more carbon/carbon double bonds, and n is from 1 to 10; for facilitating the transfer of DNA or RNA polynucleotides, or analogs thereof, into an eukaryotic or prokaryotic cell in vivo or in vitro. New carbohydrate-based surfactant compds. having sym., gemini structure, are also disclosed. Preferably, the Y1 and Y2 carbohydrate groups are open chain form of glucose. Use of the surfactant compds. for genetic transformation/transfection, in particular, delivery of antisense oligonucleotides or drugs, for gene therapy, genetic immunization, and treatment of infection, are claimed. A method for the synthesis of such carbohydrate-based surfactant compds. by addition of carbohydrate groups at the amine ends of an alkyl diamine compound is also claimed.

SUPPL. TERM: carbohydrate polyhydroxy diamine surfactant gene transfer; glucose polyhydroxy diamine surfactant gene transfer; synthesis carbohydrate polyhydroxy diamine surfactant gene transfection; drug delivery gene therapy carbohydrate polyhydroxy diamine surfactant

INDEX TERM: Drug targeting
Gene therapy
Surfactants
Transformation, genetic
(carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

INDEX TERM: Antisense oligonucleotides
ROLE: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

INDEX TERM: Glycoconjugates
ROLE: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

INDEX TERM: Amines, reactions
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(diamines, aliphatic, alkyl; carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

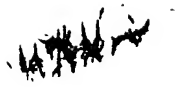
INDEX TERM: Immunization
(genetic; carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

INDEX TERM: Animal cell
(infection, therapy for; carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

INDEX TERM: 50-99-7, D-Glucose, reactions
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(carbohydrate-based polyhydroxy diamine surfactants for gene transfer)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S):
(1) Gao, X; GENE THERAPY 1995, V2(10), P710 HCAPLUS
(2) Pestman, J; LANGMUIR 1997, V13, P6857 HCAPLUS



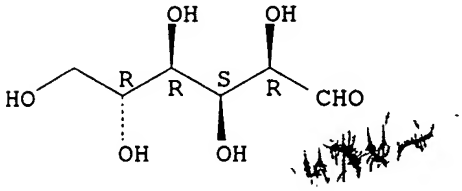
L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN **50-99-7** REGISTRY
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN (+)-Glucose
CN Anhydrous dextrose
CN Cartose
CN Cerelose
CN Cerelose 2001
CN Clearsweet 95
CN Clintose L
CN Corn sugar
CN CPC hydrate
CN D(+)-Glucose
CN Dextropur
CN Dextrose
CN Dextrosol
CN Glucodin
CN Glucolin
CN Glucose
CN Glucosteril
CN Goldsugar
CN Grape sugar
CN Maxim Energy Gel
CN Meritose
CN Meritose 200
CN Roferose ST
CN Staleydex 111
CN Staleydex 130
CN Staleydex 333
CN Staleydex 95M
CN Sugar, grape
CN Tabfine 097(HS)
CN Vadex
FS STEREOSEARCH
DR 8012-24-6, 8030-23-7, 162222-91-5, 165659-51-8, 50933-92-1, 80206-31-1
MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Book; Conference; Dissertation; Journal; Patent; Preprint; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical

study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.

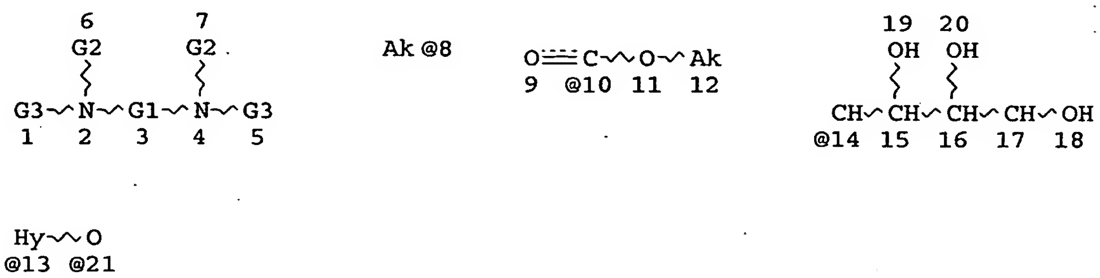


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

172624 REFERENCES IN FILE CA (1907 TO DATE)
2451 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
172814 REFERENCES IN FILE CAPLUS (1907 TO DATE)
14 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d que l24

L12 STR



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VAR G3=13/21/14
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CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 13
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M4-X5 C E1 O AT 13

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

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L17	739570	SEA FILE=REGISTRY ABB=ON PLU=ON L15 OR L16
L19	41	SEA FILE=REGISTRY SUB=L17 SSS FUL L12
L20	15	SEA FILE=HCAPLUS ABB=ON PLU=ON L19
L21	65443	SEA FILE=HCAPLUS ABB=ON PLU=ON "TRANSFORMATION, GENETIC"+PFT, NT/CT
L23	3	SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (L21 OR TRANSFEC? OR TRANSFORM?)
L24	15	SEA FILE=HCAPLUS ABB=ON PLU=ON L23 OR L20

=> d l24 ibib abs hitind hitstr 1-15

L24 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:	2004:390263 HCAPLUS
DOCUMENT NUMBER:	140:407070
TITLE:	Preparation of novel macrolide derivatives having effect of potentiating antifungal activity of azole fungicides
INVENTOR(S):	Omura, Satoshi; Tomoda, Hiroshi; Sunazuka, Toshiaki; Arai, Masayoshi; Nagamitsu, Tohru
PATENT ASSIGNEE(S):	The Kitasato Institute, Japan
SOURCE:	PCT Int. Appl., 58 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

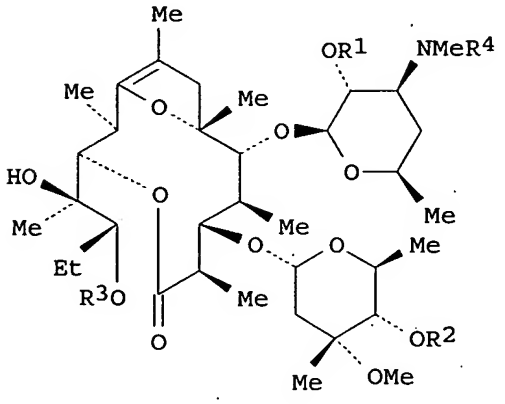
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004039823	A1	20040513	WO 2002-JP11213	20021029

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: WO 2002-JP11213 20021029

GI



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AB Novel macrolide (8,9-anhydro-pseudoerythromycin A 6,9-hemiketal, erythromycin A, and clarithromycin) derivs. (I; R1 = R2 = R3 = Ac, R4 = Me; R1 = H, R2 = R3 = Ac, R4 = Me or H; R1 = R2 = R3 = Bzl, R4 = Me; R1 = Ac or H, R2 = R3 = Pr, R4 = Me; R1 = Ac or H, R2 = R3 = hexyl, R4 = Me; R1 = Ac, R2 = R3 = Bzl, R4 = Me; R1 = R2 = H, R3 = Bzl, R4 = Me; R1 = H, R2 = R3 = hexyl, R4 = H or Et) are prepared These compds. potentiate the activity of azole antifungal agents (e.g. miconazole and fluconazole) which act on fungal infection at a low concentration within a short period of time and make it possible to lower the appearance frequency of tolerant strains, in particular Candida albicans ATCC64548 and Aspergillus niger ATCC6275. They are also used for prevention and/or treatment of fungal infections accompanied by lowering immunity in HIV infection or blood diseases.

IC ICM C07H017-08
ICS A61K031-7048; A61P031-10

CC 33-7 (Carbohydrates)
Section cross-reference(s): 1

IT 105882-75-5P, 2',4'',13-Tri-O-acetyl-8,9-anhydro-pseudoerythromycin A 6,9-hemiketal 688316-07-6P 688316-08-7P 688316-09-8P 688316-10-1P 688316-11-2P 688316-12-3P 688316-13-4P 688316-14-5P 688316-15-6P 688316-16-7P 688316-17-8P 688316-18-9P 688316-19-0P 688316-20-3P 688316-21-4P 688316-22-5P 688316-23-6P 688316-24-7P

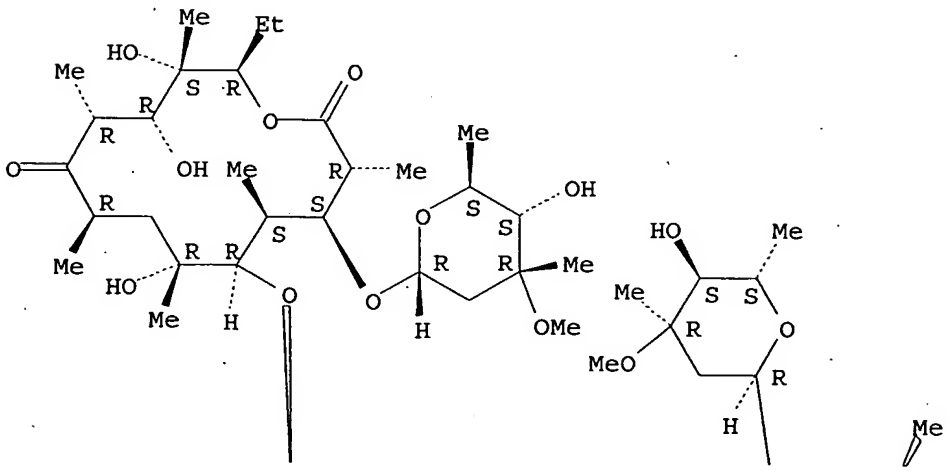
688316-25-8P 688316-26-9P 688316-27-0P 688316-28-1P
688316-29-2P 688316-30-5P 688316-31-6P 688316-32-7P 688316-33-8P
688316-34-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of macrolide glycoside derivs. as agents for potentiating antifungal activity of azole fungicides against tolerant strains of Candida albicans and Aspergillus niger)

IT **688316-25-8P 688316-26-9P 688316-34-9P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of macrolide glycoside derivs. as agents for potentiating antifungal activity of azole fungicides against tolerant strains of Candida albicans and Aspergillus niger)

RN 688316-25-8 HCAPLUS
CN Erythromycin, N,N'-1,2-ethanediylbis[N-demethyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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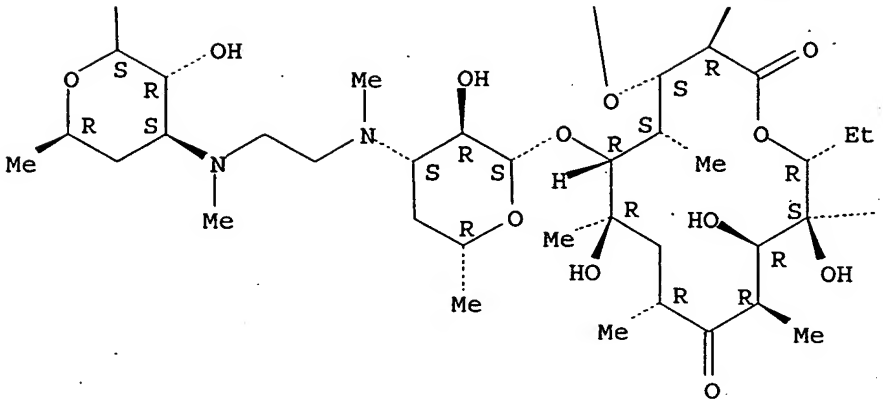


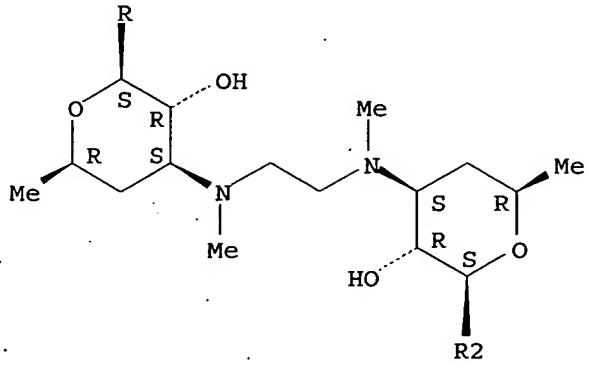
PAGE 2-B

----Me

RN 688316-26-9 HCAPLUS
CN Erythromycin, N,N'-1,2-ethanediylbis[N-demethyl-6-O-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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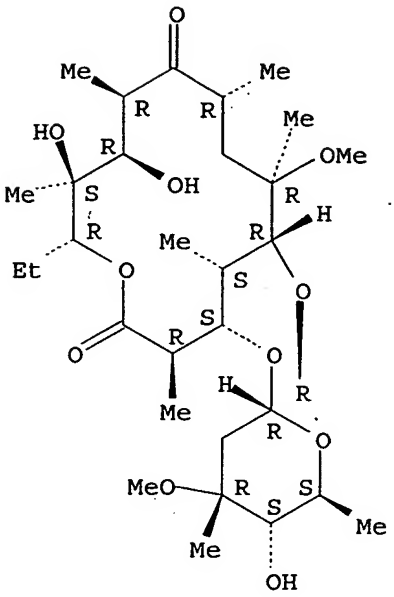

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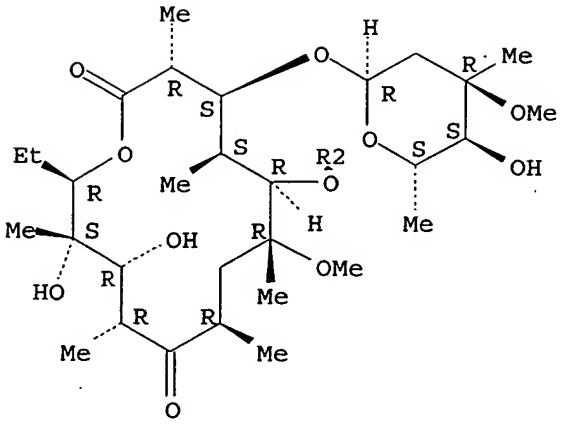
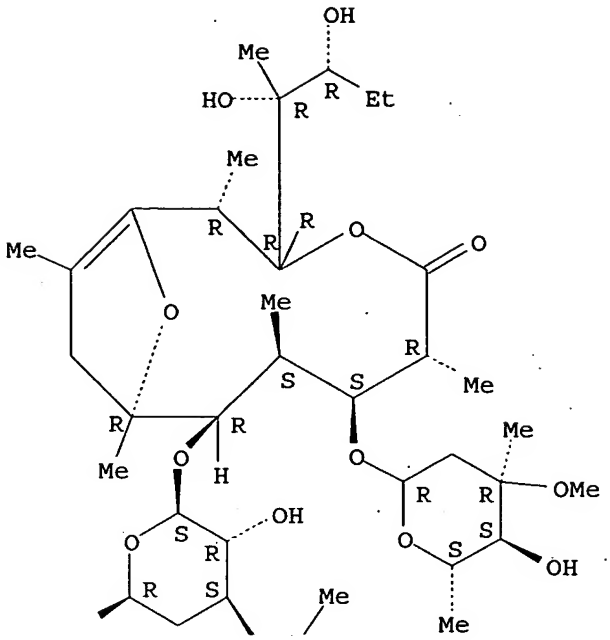


RN 688316-34-9 HCAPLUS
CN 4,13-Dioxabicyclo[8.2.1]tridec-12-en-5-one, 3',3'''-[1,3-propanediylbis(methylimino)]bis[7-[(2,6-dideoxy-3-C-methyl-3-O-methyl-α-L-ribo-hexopyranosyl)oxy]-3-[(1R,2R)-1,2-dihydroxy-1-methylbutyl]-2,6,8,10,12-pentamethyl-9-[(3,4,6-trideoxy-β-D-xylo-hexopyranosyl)oxy]-, (2R,2'R,3R,3'R,6R,6'R,7S,7'S,8S,8'S,9R,9'R,10R,10'R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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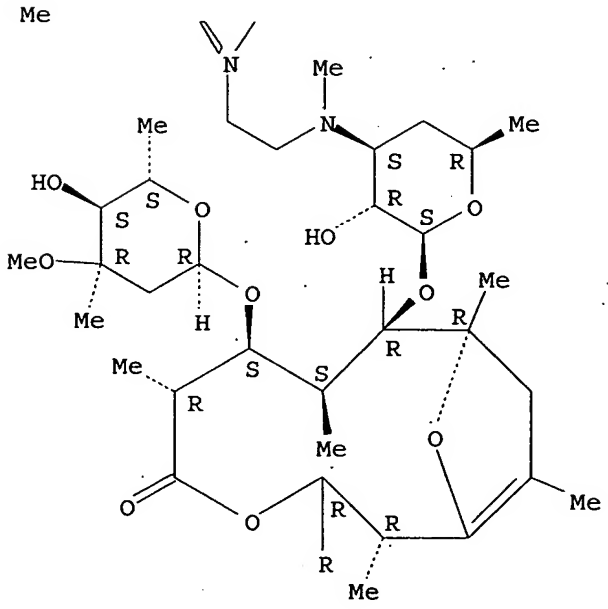
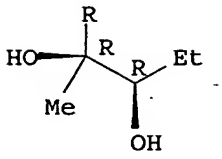




REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:331311 HCAPLUS
DOCUMENT NUMBER: 139:70732
TITLE: Sugar-Based Gemini Surfactants with pH-Dependent Aggregation Behavior: Vesicle-to-Micelle Transition, Critical Micelle Concentration, and Vesicle Surface Charge Reversal
AUTHOR(S): Johnsson, Markus; Wagenaar, Anno; Stuart, Marc C. A.; Engberts, Jan B. F. N.
CORPORATE SOURCE: Stratingh Institute, Physical Organic Chemistry Unit, University of Groningen, Groningen, Neth.
SOURCE: Langmuir (2003), 19(11), 4609-4618
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In a recent report, we presented data on the rich and unusual pH-dependent aggregation behavior of a sugar-based (reduced glucose) gemini surfactant (Johnsson et al. J. Am. Chemical Society 2003, 125, 757). In the present study, we extend the previous investigation by introducing a different sugar headgroup (reduced mannose), by varying the spacer between the two main surfactant parts, and by introducing, in one of the surfactants, an amide linkage (instead of an amine linkage) between the headgroup and the unsatd. (C18:1) hydrocarbon tails. The aggregation behavior of these four gemini surfactants has been studied and compared by means of light scattering, cryo-transmission electron microscopy, electrophoretic mobility, and fluorescence measurements. We find that all four surfactants form vesicles near neutral or high pH. However, the vesicles made from the amine-containing geminis are **transformed** into cylindrical or wormlike micelles at lower pH values (pH < .apprx.5.5). The micellization is driven mainly by an increased electrostatic repulsion, caused by the protonation of the tertiary amino groups, and we find that the nature of the sugar or spacer has little influence on this process. At low pH (pH 2), solely small globular micelles are found, and the critical micelle concentration at this pH is about 0.005-0.010 mM for the different amine-containing surfactants. As was expected, the gemini surfactant with the amide instead of the amine functional groups in the headgroup does not undergo the vesicle-to-micelle transition but displays only vesicle formation within the investigated pH range. The electrophoretic mobility measurements on the vesicular samples formed from the amine-containing geminis show that the vesicles are cationic below pH .apprx.7-7.5; however, the vesicles acquire a substantial neg. charge at a higher pH. The most probable explanation for this charge reversal is a strong adsorption (or binding) of hydroxide ions onto the vesicle surface. In accordance with this hypothesis, we find that the vesicles made from the amide-containing gemini are anionic (no protonation) even at a low pH (pH

<5). Using a simple Poisson-Boltzmann model, we are able to describe the obtained ζ-potential profiles reasonably well and derive a hydroxide-ion binding constant (KOH) for the resp. systems. We find that the nature of the sugar does have a small influence on KOH. The colloidal stability of all four types of the gemini vesicles seems to be well-described by the classical Derjaguin-Landau-Verwey-Overbeek theory, and the vesicles aggregate/flocculate rapidly in the limit of low surface potential. However, the flocculated vesicles can be easily redispersed by, for example, raising the pH of the solution, and this flocculation/redispersal process is completely reversible.

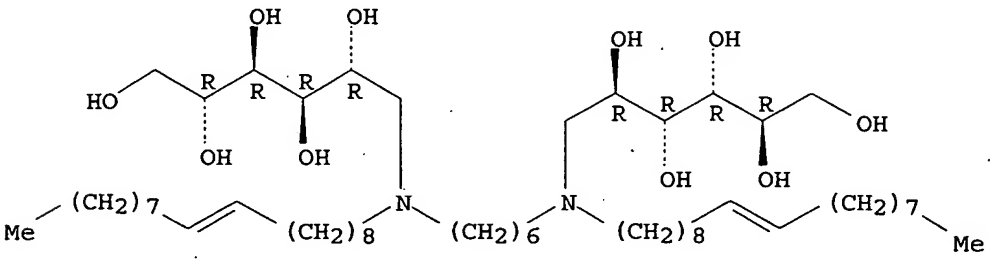
CC 46-3 (Surface Active Agents and Detergents)
Section cross-reference(s): 44

IT 493020-90-9 550358-84-4 **550358-85-5** 550358-86-6
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(surface property of sugar-based Gemini surfactants with pH-dependent aggregation behavior)

IT **550358-85-5**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(surface property of sugar-based Gemini surfactants with pH-dependent aggregation behavior)

RN 550358-85-5 HCAPLUS
CN D-Mannitol, 1,1'-[1,6-hexanediylbis(9-octadecenylimino)]bis[1-deoxy-, dihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



●2 HCl

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:45626 HCAPLUS
DOCUMENT NUMBER: 138:149329
TITLE: **Transfection** mediated by gemini surfactants: engineered escape from the endosomal compartment
AUTHOR(S): Bell, Paul C.; Bergsma, Mark; Dolbnya, Igor P.; Bras, Wim; Stuart, Marc C. A.; Rowan, Alan E.; Feiters, Martinus C.; Engberts, Jan B. F. N.
CORPORATE SOURCE: Physical Organic Chemistry Unit, Stratingh Institute, University of Groningen, Groningen, 9747, Neth.
SOURCE: Journal of the American Chemical Society (2003), 125(6), 1551-1558

CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The structure of the lipoplex formed from DNA and the sugar-based cationic gemini surfactant 1, which exhibits excellent **transfection** efficiency, has been investigated in the pH range 8.8-3.0 utilizing small-angle X-ray scattering (SAXS) and cryo-electron microscopy (cryo-TEM). Uniquely, three well-defined morphologies of the lipoplex were observed upon gradual acidification: a lamellar phase, a condensed lamellar phase, and an inverted hexagonal (HII) columnar phase. Using mol. modeling, we link the observed lipoplex morphologies and phys. behavior to specific structural features in the individual surfactant, illuminating key factors in future surfactant design, viz., a spacer of six methylene groups, the presence of two nitrogens that can be protonated in the physiol. pH range, two unsatd. alkyl tails, and hydrophilic sugar headgroups. Assuming that the mechanism of **transfection** by synthetic cationic surfactants involves endocytosis, we contend that the efficacy of gemini surfactant 1 as a gene delivery vehicle can be explained by the unprecedented observation of a pH-induced formation of the inverted hexagonal phase of the lipoplex in the endosomal pH range. This change in morphol. leads to destabilization of the endosome through fusion of the lipoplex with the endosomal wall, resulting in release of DNA into the cytoplasm.

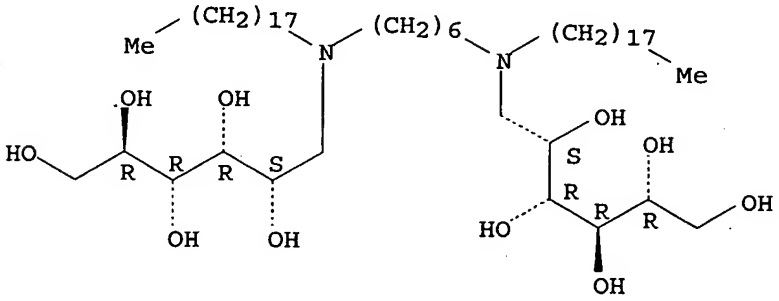
CC 6-6 (General Biochemistry)
Section cross-reference(s): 3, 46

IT **344612-92-6 344612-93-7**
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(lipoplex membrane phase characterization and mol. modeling escape of gemini surfactant from endosomal compartment)

IT **344612-92-6 344612-93-7**
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(lipoplex membrane phase characterization and mol. modeling escape of gemini surfactant from endosomal compartment)

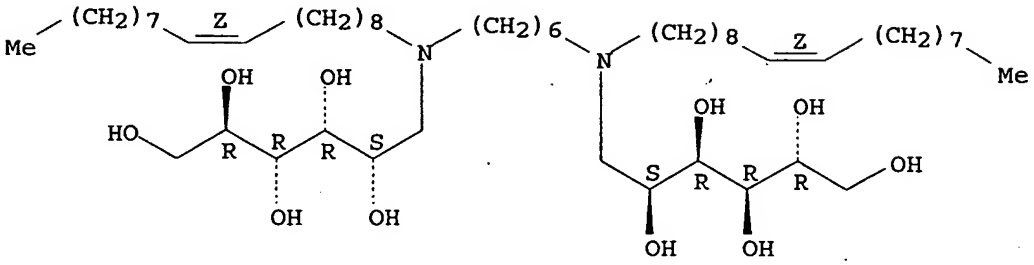
RN 344612-92-6 HCAPLUS
CN D-Glucitol, 1,1'-[1,6-hexanediylbis(octadecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 344612-93-7 HCAPLUS
CN D-Glucitol, 1,1'-[1,6-hexanediylbis[(9Z)-9-octadecenylimino]]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



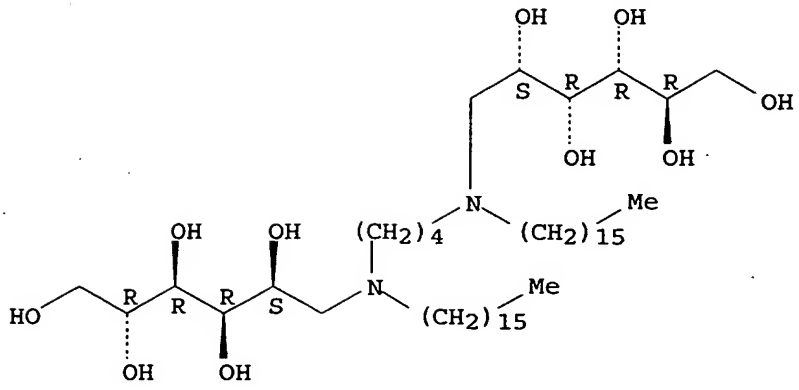
REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:560291 HCAPLUS
DOCUMENT NUMBER: 137:281043
TITLE: Association behaviour of glucitol amine gemini surfactants self-consistent-field theory and molecular-dynamics simulations
AUTHOR(S): van Eijk, M. C. P.; Bergsma, M.; Marrink, S.-J.
CORPORATE SOURCE: Center for Chemistry and Chemical Engineering, Physical Chemistry 1, Lund University, Lund, 221 00, Swed.
SOURCE: European Physical Journal E: Soft Matter (2002), 7(4), 317-324
CODEN: EPJSFH; ISSN: 1292-8941
PUBLISHER: EDP Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The association behavior of a number of glucitol amine gemini surfactants was investigated by means of mol. dynamics and self-consistent-field calcns. The titratable head group of the surfactant is responsible for a micelle-to-membrane transition when changing the pH. Furthermore, the association structure of this group of surfactants is very sensitive to ionic strength. The combination of a charged head group, a spacer, and the hydrophilic glucitol side chains is responsible for the possible structural transitions in the assocs. as a function of ionic strength and pH.

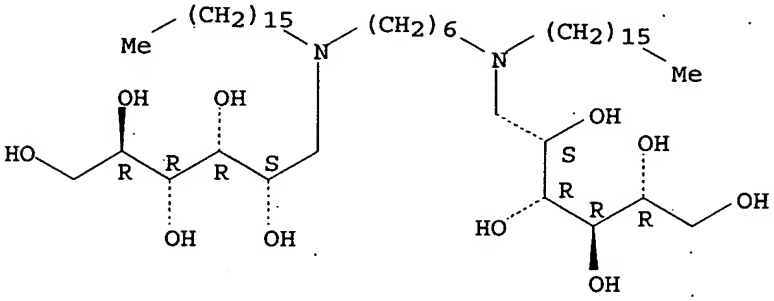
CC 46-1 (Surface Active Agents and Detergents)
IT **344612-89-1 344612-90-4**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(association behavior of glucitol amine gemini surfactants SCF theory and mol.-dynamics simulations)
IT **344612-89-1 344612-90-4**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(association behavior of glucitol amine gemini surfactants SCF theory and mol.-dynamics simulations)
RN 344612-89-1 HCAPLUS
CN D-Glucitol, 1,1'-[1,4-butanediylbis(hexadecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 344612-90-4 HCAPLUS
CN D-Glucitol, 1,1'-[1,6-hexanediylbis(hexadecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:868139 HCAPLUS
DOCUMENT NUMBER: 136:1862
TITLE: Surfactants for herbicidal glyphosate formulations
INVENTOR(S): Lennon, Patrick J.; Chen, Xiangyang; Arhancet, Garciela B.; Glaenzer, Jeanette L.; Gillespie, Jane L.; Graham, Jeffrey A.; Becher, David Z.; Wright, Daniel L.; Agbaje, Henry E.; Xu, Xiaodong C.; Abraham, William; Brinker, Ronald J.; Pallas, Norman R.; Wideman, Al S.; Mahoney, Martin D.; Henke, Susan L.
PATENT ASSIGNEE(S): Monsanto Technology, LLC, USA
SOURCE: PCT Int. Appl., 365 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001089302	A2	20011129	WO 2001-US16550	20010521

WO 2001089302 A3 20030626
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CA 2407751 AA 20011129 CA 2001-2407751 20010521
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JP 2003535056 T2 20031125 JP 2001-585556 20010521
BR 2001010978 A 20040113 BR 2001-10978 20010521
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US 2003087764 A1 20030508 US 2001-988352 20011119
US 2003096708 A1 20030522 US 2001-988340 20011119
CA 2439689 AA 20020912 CA 2002-2439689 20020301
WO 2002069718 A2 20020912 WO 2002-US6709 20020301
WO 2002069718 A3 20021031
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EP 1389912 A2 20040225 EP 2002-713759 20020301
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US 2003104943 A1 20030605 US 2002-926521 20020426
WO 2002096199 A2 20021205 WO 2002-US16032 20020521
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WO 2002102153 A2 20021227 WO 2002-US15977 20020521
WO 2002102153 A3 20031113
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,

GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

NZ 529552	A	20031219	NZ 2002-529552	20020521
EP 1389040	A2	20040218	EP 2002-747849	20020521
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2002009919	A	20040824	BR 2002-9919	20020521
BR 2002009940	A	20040824	BR 2002-9940	20020521

PRIORITY APPLN. INFO.:

US 2000-205524P	P	20000519
US 2000-206628P	P	20000524
US 2001-273234P	P	20010302
US 2001-274368P	P	20010308
WO 2001-US16550	W	20010521
US 2001-926521	A2	20011114
US 2001-988340	A	20011119
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US 2001-988353	A	20011119
WO 2002-US6709	W	20020301
US 2002-926521	A2	20020426
WO 2002-US15977	W	20020521
WO 2002-US16032	W	20020521

OTHER SOURCE(S): MARPAT 136:1862

AB A herbicidal composition is provided comprising an aqueous solution of glyphosate, predominantly in the form of the potassium salt, at a concentration ≥300 g/L and a surfactant solution or stable suspension, emulsion, or dispersion in the water, at 20-300 g/L, wherein the composition has a viscosity <250 cP at 0° or a Gardner color value <10. The surfactants are amines or quaternary ammonium salts. When the formulation is applied to plants, liquid crystals comprising the surfactant are formed on leaves.

IC ICM A01N057-20
ICS A01N025-30; C11D001-44; C11D001-62

CC 5-3 (Agrochemical Bioregulators)

IT 24991-53-5DP, coco fatty acid amide derivs. 165327-15-1P 376395-68-5P 376395-77-6P **376395-78-7P 376395-79-8P 376395-80-1P** 376395-93-6P 376395-94-7P 376395-95-8P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation as surfactant for herbicidal glyphosate formulations)

IT 112-00-5, Arquad 12-37W 112-02-7, Cetyltrimethylammonium chloride 3332-27-2, Myristyl dimethyl amine oxide 9002-92-0, Brij35 9003-11-6D, Oxirane-methyloxirane copolymer, alkylamine/tallow derivs. 9004-95-9, Brij56 9005-00-9, Brij78 9042-76-6, Emcol CC42 23323-40-2 24938-91-8, Ethoxylated tridecyl alcohol 25322-68-3D, Polyethylene glycol, cocoamine derivs. 34901-14-9, DPA 400E 35972-47-5 37311-01-6D, dimethylamine ether derivs. 40021-80-5D, tallow alkyl derivs. 65150-81-4D, dimethylamine ether derivs. 73038-25-2 73458-62-5 90355-86-5 157072-01-0 376395-97-0 376395-98-1 376395-99-2 **376396-00-8** 376396-01-9 376396-02-0 376396-03-1D, coco/tallow amine derivs. 376590-44-2, Q 17-M3 376595-59-4, 1816E15PA 376596-24-6, Duoquat T 50 376596-78-0, EXP-B 2030A 376596-90-6, EXP-B 2030B 376597-02-3, EXP-B 2030C 376597-53-4, Surfonic AGM 50 376600-21-4, T 23E1PAE2 376601-69-3, NDPA 14E6 376615-49-5, E-D 17-5 376631-04-8, Q 14M3
RL: MOA (Modifier or additive use); USES (Uses)
(surfactant in herbicidal glyphosate formulations)

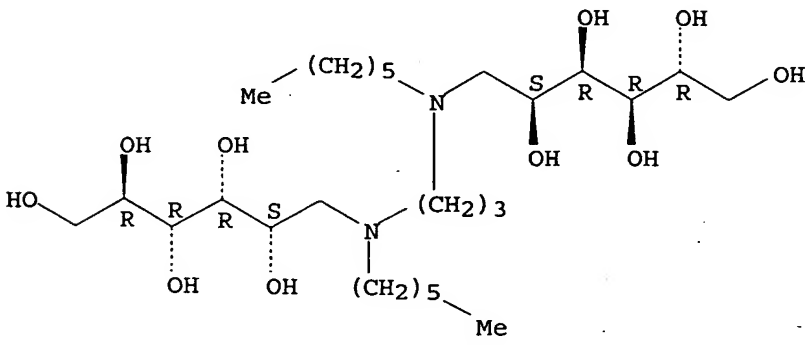
IT **376395-78-7P 376395-79-8P 376395-80-1P**
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation as surfactant for herbicidal glyphosate formulations)

RN 376395-78-7 HCAPLUS

CN D-Glucitol, 1,1'-[1,3-propanediylbis(hexylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

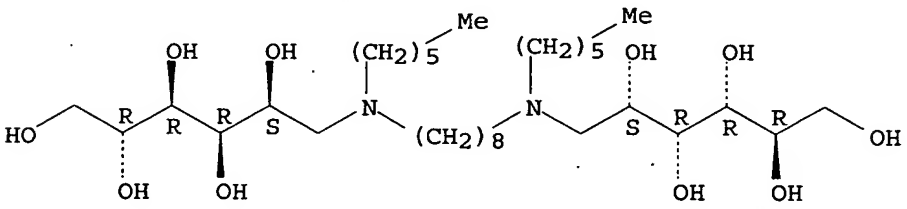
Absolute stereochemistry.



RN 376395-79-8 HCAPLUS

CN D-Glucitol, 1,1'-[1,8-octanediylbis(hexylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

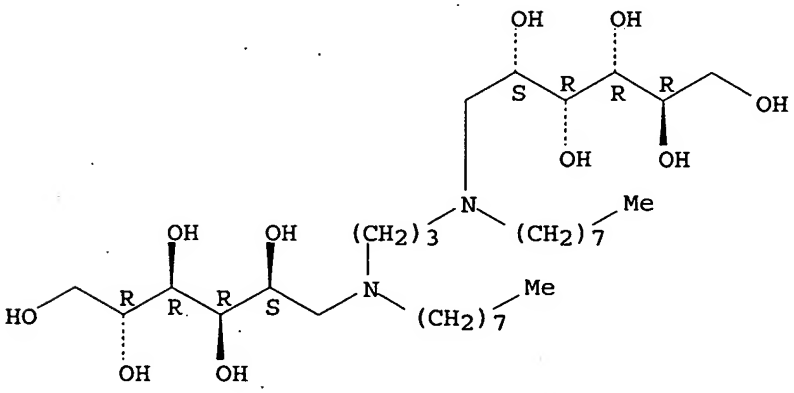
Absolute stereochemistry.



RN 376395-80-1 HCAPLUS

CN D-Glucitol, 1,1'-[1,3-propanediylbis(octylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

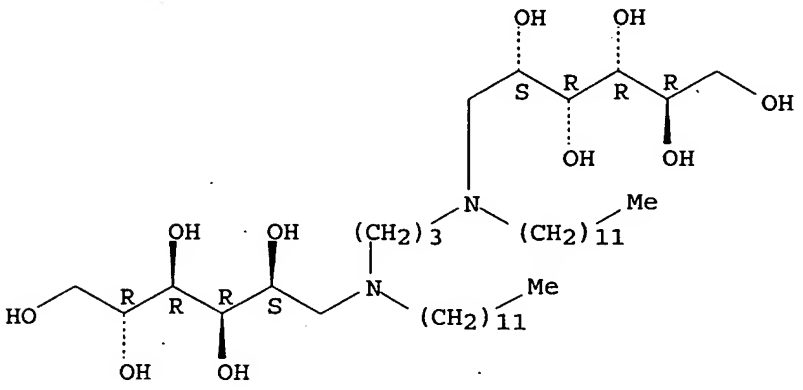
Absolute stereochemistry.



IT **376396-00-8**

RL: MOA (Modifier or additive use); USES (Uses)
(surfactant in herbicidal glyphosate formulations)
RN 376396-00-8 HCAPLUS
CN D-Glucitol, 1,1'-[1,3-propanediylbis(dodecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L24 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:807874 HCAPLUS
DOCUMENT NUMBER: 136:140263
TITLE: pH-Dependent Aggregation Behavior of a Sugar-Amine Gemini Surfactant in Water: Vesicles, Micelles, and Monolayers of Hexane-1,6-bis(hexadecyl-1'-deoxyglucitylamine)
AUTHOR(S): Bergsma, Mark; Fielden, Matthew L.; Engberts, Jan B. F. N.
CORPORATE SOURCE: Physical Organic Chemistry Unit, Stratingh Institute, University of Groningen, Groningen, 9747 AG, Neth.
SOURCE: Journal of Colloid and Interface Science (2001), 243(2), 491-495
CODEN: JCISA5; ISSN: 0021-9797
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The pH-dependent aggregation behavior of one representative of a recently described series of sugar-amine gemini surfactants has been investigated. The surface tension (γ) and turbidity of hexane-1,6-bis(hexadecyl-1'-deoxyglucitylamine) drop steeply between pH 5.5 and 4.0, consistent with a vesicle-to-micelle transition. The critical micelle concentration (cmc) at low pH
(3.0) was determined by surface tension measurements to be 1+10-3 M. This value is high, as γ is at the cmc (57 mN m-1). The area per headgroup (Ah) extracted from the slope of the curve of γ vs concentration below the cmc is 109 Å2. In an attempt to obtain a reasonable estimate of the headgroup area at higher pH, surface pressure vs area measurements were performed on a monolayer supported on pure water (pH 6), providing an Ah of ca. 69 Å2. The dependence of Ah on pH is consistent with the proposed vesicle-to-micelle transition. Measurements of the gel-to-liquid crystalline phase transition using differential scanning calorimetry at a range of pH revealed a drop in both the phase transition temperature and the transition enthalpy with decreasing pH. The pH dependence of the

aggregation behavior can thus be summarized as follows: (1) pH 7.5-5.5, bilayer vesicles; (2) pH 5.5-4.0, a "drop region" where aggregate morphol. is sensitive to small changes in pH; and (3) pH <4.0, micelles. (c) 2001 Academic Press.

CC 66-2 (Surface Chemistry and Colloids)
Section cross-reference(s): 75

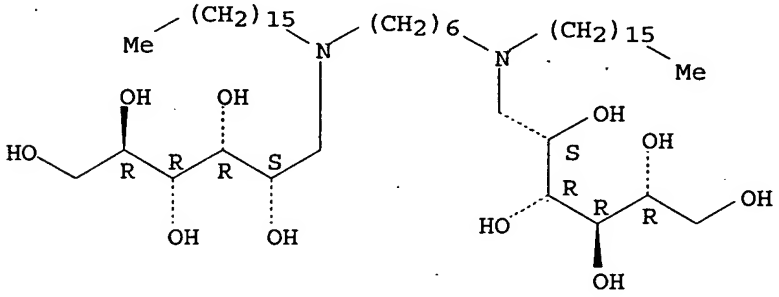
IT **344612-90-4**, Hexane-1,6-bis(hexadecyl-1'-deoxyglucitylamine)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(pH-dependent aggregation behavior and vesicles and micelles and monolayers of hexanebishexadecyldeoxyglucitylamine in water)

IT **344612-90-4**, Hexane-1,6-bis(hexadecyl-1'-deoxyglucitylamine)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(pH-dependent aggregation behavior and vesicles and micelles and monolayers of hexanebishexadecyldeoxyglucitylamine in water)

RN 344612-90-4 HCAPLUS

CN D-Glucitol, 1,1'-[1,6-hexanediylbis(hexadecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:190727 HCAPLUS

DOCUMENT NUMBER: 135:50963

TITLE: Sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro

AUTHOR(S): Fielden, Matthew L.; Perrin, Christele; Kremer, Andreas; Bergsma, Mark; Stuart, Marc C.; Camilleri, Patrick; Engberts, Jan B. F. N.

CORPORATE SOURCE: Physical Organic Chemistry Unit, Stratingh Institute, University of Groningen, Groningen, 9747 AG, Neth.

SOURCE: European Journal of Biochemistry (2001), 268(5), 1269-1279
CODEN: EJBCAI; ISSN: 0014-2956

PUBLISHER: Blackwell Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Novel reduced sugar gemini amphiphiles linked through their tertiary amino head groups via alkyl spacers of 4 or 6 carbons, and with varying (unsatd.) alkyl tail lengths of 12-18, have been synthesized and tested

for **transfection** in vitro in an adherent Chinese hamster ovary cell line (CHO-K1). **Transfection** efficiencies peaked at 2.7 times that of the com. standard Lipofectamine Plus/2000 for pure solns. of the compound bearing unsatd. (oleyl) alkyl tails. For those compds. bearing saturated alkyl tails, **transfection** efficiency peaked at a tail length of 16, at a level similar to Lipofectamine Plus/2000. All of the amphiphiles formed bilayer vesicles at physiol. pH. Some of the amino groups at the surface were protonated, and vesicles therefore bore a pos. charge. Increased protonation with reduced pH resulted in greatly increased monomer solubility and a morphol. change from vesicle to micelle at characteristic pH values, dependent on the tail length. For the compds. promoting high **transfection** efficiency, this characteristic pH was within the range found in the endosomal compartment (7.4-4.0). Formation of mixed micelles between gemini surfactant and membrane phospholipids at reduced pH may therefore provide a method of endosome rupture and subsequent escape of entrapped DNA, thus discarding the need for extra fusogenic or endosomolytic agents. The pos. charge on the vesicles at physiol. pH drives the colloidal association with DNA. Small angle X-ray scattering measurements indicate that lamellar aggregates are formed, which have a d spacing of 48-54 Å. Preliminary differential scanning calorimetric measurements suggest that reduction of pH causes a disordering of the hydrocarbon region of the DNA-surfactant complex.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 1, 33

ST sugar tertiary amino gemini surfactant **transfection**; vesicle micelle sugar amino gemini surfactant

IT Drug delivery systems
(liposomes; sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro)

IT Amphiphiles
Gene therapy
Micelles
Surface tension
Surfactants
Transformation, genetic
(sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro)

IT **344612-85-7P 344612-86-8P 344612-87-9P**
344612-88-0P 344612-89-1P 344612-90-4P
344612-91-5P 344612-92-6P 344612-93-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro)

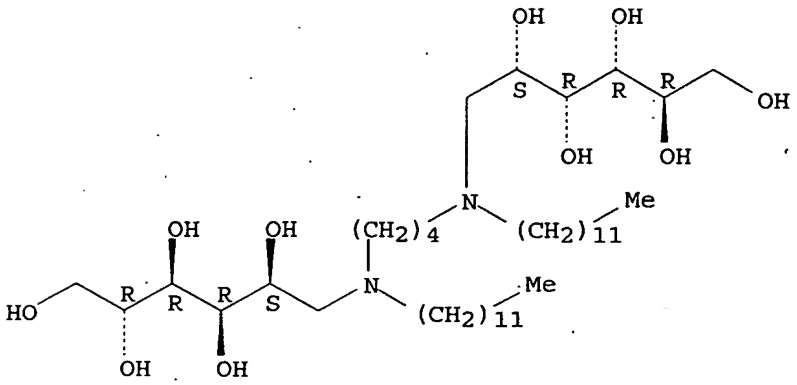
IT 50-99-7, D-Glucose, reactions 124-09-4, 1,6-Hexanediamine, reactions 124-25-4, Tetradecanal 199680-37-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro)

IT **344612-85-7P 344612-86-8P 344612-87-9P**
344612-88-0P 344612-89-1P 344612-90-4P
344612-91-5P 344612-92-6P 344612-93-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)
(sugar-based tertiary amino gemini surfactants with a vesicle-to-micelle transition in the endosomal pH range mediate efficient **transfection** in vitro)

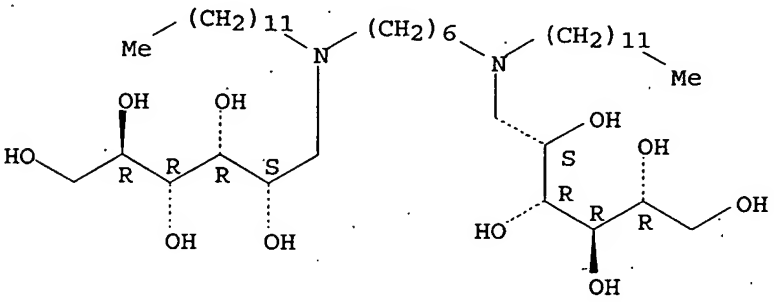
RN 344612-85-7 HCAPLUS
CN D-Glucitol, 1,1'-[1,4-butanediylbis(dodecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 344612-86-8 HCAPLUS
CN D-Glucitol, 1,1'-[1,6-hexanediylbis(dodecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 344612-87-9 HCAPLUS
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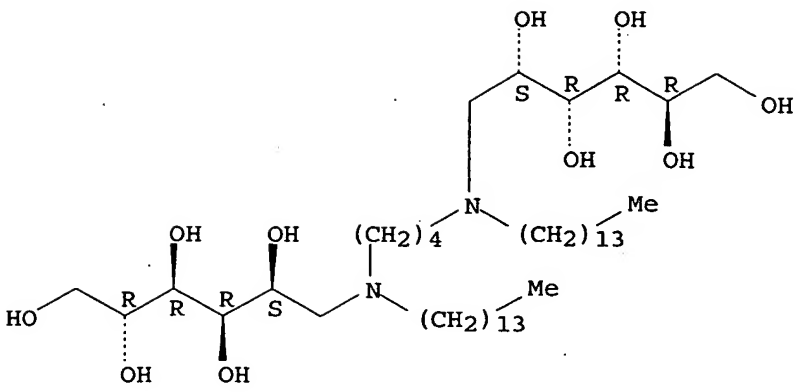
Absolute stereochemistry.



RN 344612-88-0 HCAPLUS
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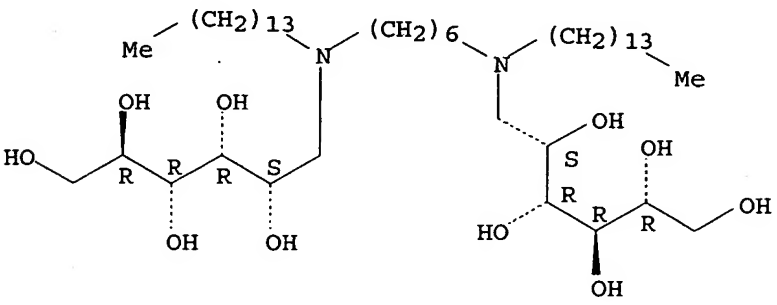
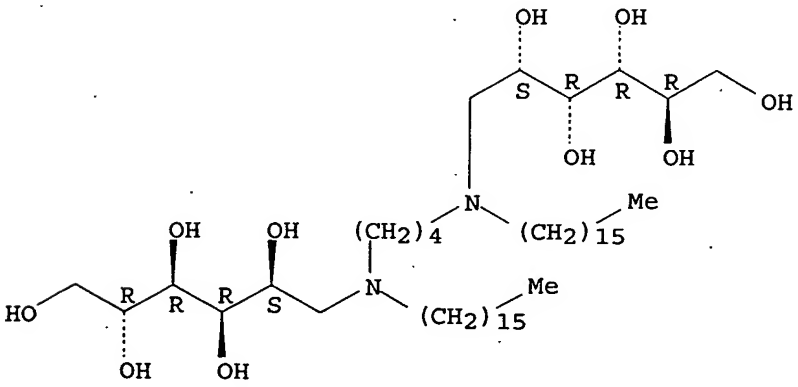
Absolute stereochemistry.



RN 344612-89-1 HCAPLUS
CN D-Glucitol, 1,1'-[1,4-butanediylbis(hexadecylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 344612-90-4 HCAPLUS
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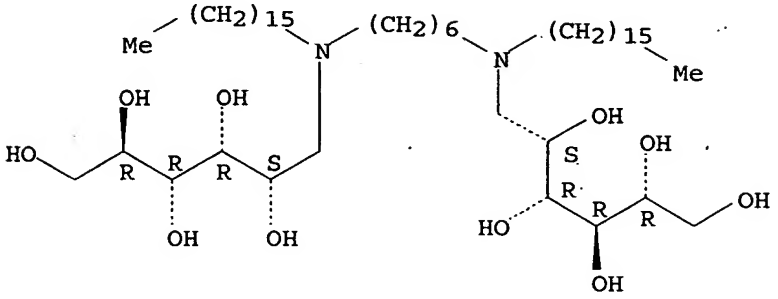
(CA INDEX NAME)

Absolute stereochemistry.



RN 344612-91-5 HCAPLUS
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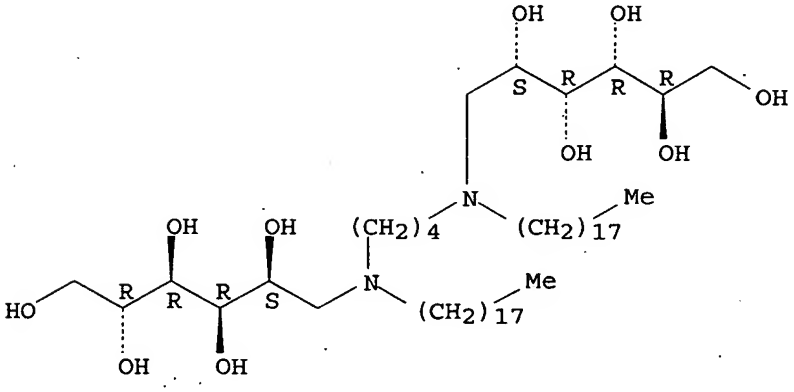
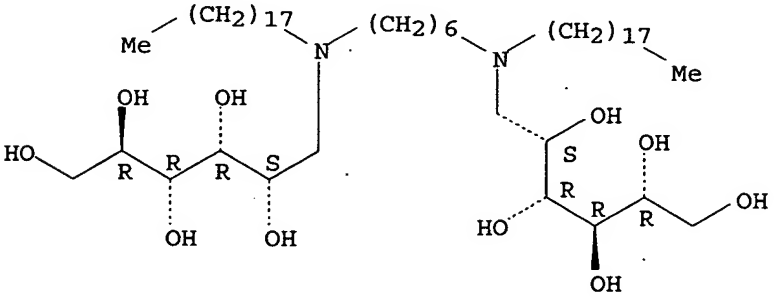
(CA INDEX NAME)

Absolute stereochemistry.



RN 344612-92-6 HCAPLUS
CN D-Glucitol, 1,1'-[1,6-hexanediylbis(octadecylimino)]bis[1-deoxy- (9CI)
(CA INDEX NAME)

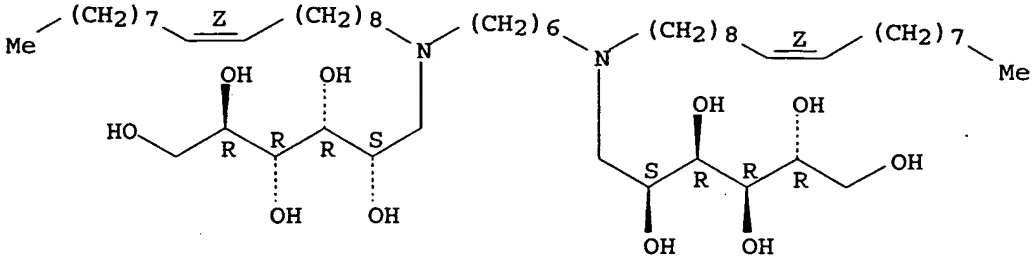
Absolute stereochemistry.



RN 344612-93-7 HCAPLUS

CN D-Glucitol, 1,1'-[1,6-hexanediylbis[(9Z)-9-octadecenylimino]]bis[1-deoxy-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

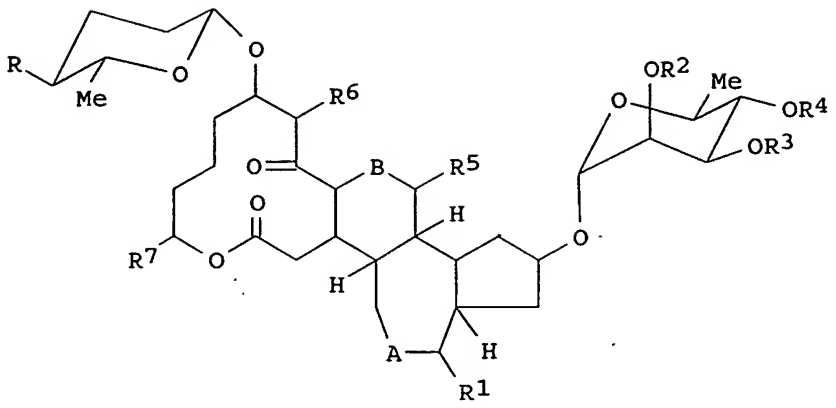


REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:794364 HCAPLUS
DOCUMENT NUMBER: 132:35986
TITLE: Preparation of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides
INVENTOR(S): Deamicis, Carl Vincent; Anzeveno, Peter Biagio; Martynow, Jacek G.; McLaren, Kevin L.; Green, Frederick Richard, III; Sparks, Thomas C.; Kirst, Herbert A.; Creemer, Lawrence Camillo; Worden, Thomas V.; Schoonover, Joe Raymond, Jr.; Gifford, James Michael; Hatton, Christopher J.; Hegde, Vidyadhar B.; Crouse, Gary D.; Thoreen, Brian R.; Ricks, Michael J.
PATENT ASSIGNEE(S): Dow Agrosciences LLC, USA
SOURCE: U.S., 122 pp., Cont. of U.S. Ser. No. 662,549, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6001981	A	19991214	US 1997-968856		19971105
TW 487559	B	20020521	TW 1994-83102553		19961213
PRIORITY APPLN. INFO.:			US 1996-662549	B1	19960613
			US 1995-201P	P	19950614
			US 1995-1435P	P	19950714
			US 1995-9006P	P	19951221

OTHER SOURCE(S): MARPAT 132:35986
GI



I

AB Title compds. I (A, B = single bond, double bond, epoxide linkage; R = alkylamino, ether; R1, R6 = H, Me; R2-R4 = alkyl, haloalkyl, alkanoyl, OH; R5 = H, alkyl, alkylamino, alkylhydroxylamino; R7 = Me, Et) are prepared by modifying the compds. that are naturally produced from Saccharopolyspora spinosa. The compds. of the invention have been shown to have activity against insects and mites. The compds. are prepared by modifying the rhamnose sugar, modification of the forosamine sugar, or starting with pseudo-aglycon and then replacement with a nonsugar derivative or different sugar, modification of the 5, 6, 5-tricyclic and 12-membered macrocyclic lactone part of the compds. naturally produced or of the pseudo-aglycon of the natural compds. Thus, 2'-O-trifluoroacetyl spinosyn Q was prepared and tested as a control of Stomoxys calcitrans (stable fly) and Phormia regina (blow fly) with 100% of ASF killed at 100 ppm.

IC ICM C07H017-00

NCL 536007100

CC 33-7 (Carbohydrates)
Section cross-reference(s): 5, 34

IT 187168-79-2P 187168-80-5P 187168-82-7P 187168-83-8P 187168-84-9P
187168-86-1P 187168-91-8P 187168-92-9P 187168-94-1P 187168-98-5P
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252575-63-6P 252575-64-7P 252575-65-8P 252575-83-0P

RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT **187171-96-6P**

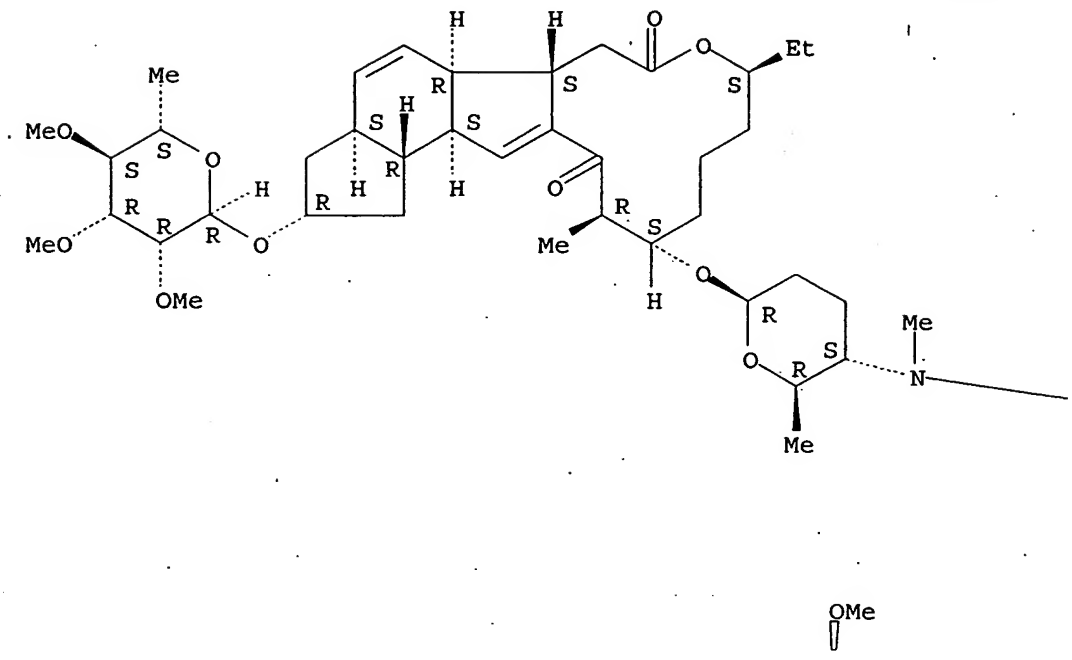
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

RN 187171-96-6 HCAPLUS

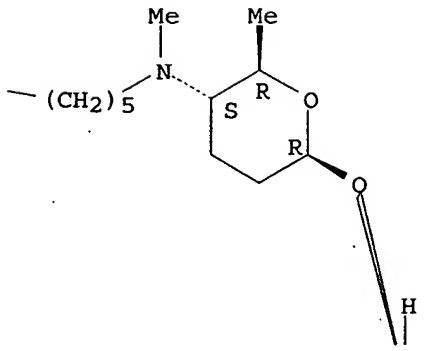
CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 13,13'-[1,5-pentanediylbis[(methylimino)[(2R,5S,6R)-tetrahydro-6-methyl-2H-pyran-5,2-diyl]oxy]]bis[2-[(6-deoxy-2,3,4-tri-O-methyl-α-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,2'R,3aS,3'aS,5aR,5'aR,5bS,5'bS,9S,9'S,13S,13'S,14R,14'R,16aS,16'aS,16bR,16'bR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



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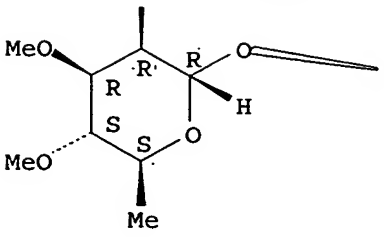
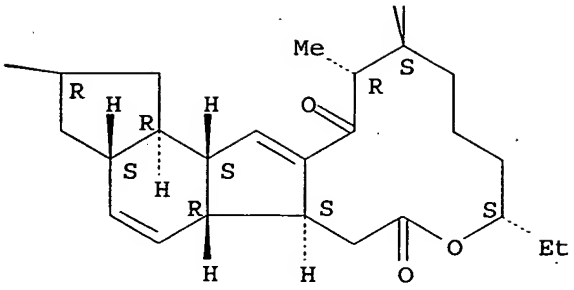


PAGE 2-B



REFERENCE COUNT: 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

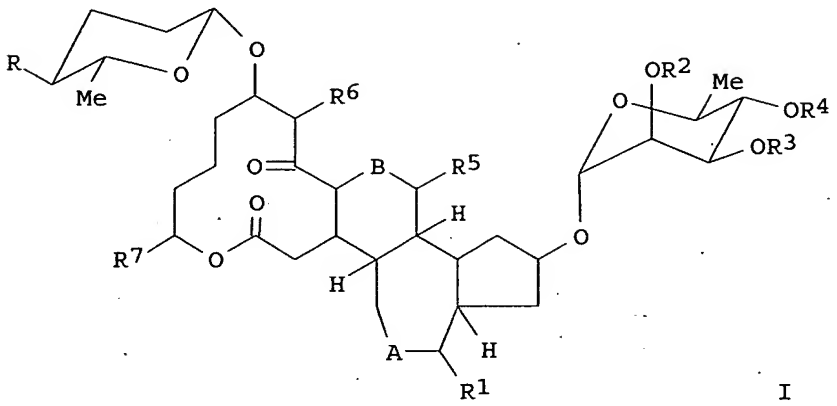
L24 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:181111 HCAPLUS
DOCUMENT NUMBER: 126:171845
TITLE: Preparation of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides
INVENTOR(S): Deamicis, Carl Vincent; Anzeveno, Peter Biagio; Martynow, Jacek G.; Mclaren, Kevin L.; Green, Frederick Richard, III; Sparks, Thomas C.; Kirst, Herbert A.; Creemer, Lawrence Camillo; Worden, Thomas V.; Schoonover, Joe Raymond, Jr.; Gifford, James Michael; Hatton, Christopher J.; Hegde, Vidyadhar B.; Crouse, Gary D.; Thoreen, Brian R.; Ricks, Michael J.; et al.
PATENT ASSIGNEE(S): DowElanco, USA
SOURCE: PCT Int. Appl., 280 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9700265	A1	19970103	WO 1996-US10327	19960613
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9661771	A1	19970115	AU 1996-61771	19960613

AU 711185	B2	19991007			
EP 837870	A1	19980429	EP 1996-919423		19960613
EP 837870	B1	20020724			
R: DE, ES, FR, GB, IT					
CN 1191541	A	19980826	CN 1996-195634		19960613
CN 1130369	B	20031210			
BR 9608380	A	19990105	BR 1996-8380		19960613
JP 11506117	T2	19990602	JP 1996-503351		19960613
ES 2179202	T3	20030116	ES 1996-919423		19960613
TW 487559	B	20020521	TW 1994-83102553		19961213
PRIORITY APPLN. INFO.:			US 1995-201P	P	19950614
			US 1995-1435P	P	19950714
			US 1995-9006P	P	19951221
			US 1996-662549	A	19960613
			WO 1996-US10327	W	19960613

OTHER SOURCE(S): MARPAT 126:171845

GI



I

AB Title compds. I (A, B = single bond, double bond, epoxide linkage; R = alkylamino, ether; R1, R6 = H, Me; R2-R4 = alkyl, haloalkyl, alkanoyl, OH; R5 = H, alkyl, alkylamino, alkylhydroxylamino; R7 = Me, Et) are prepared by modifying the compds. that are naturally produced from Saccharopolyspora spinosa. The compds. of the invention have been shown to have activity against insects and mites. The compds. are prepared by modifying the rhamnose sugar, modification of the forosamine sugar, or starting with pseudo-aglycon and then replacement with a nonsugar derivative or different sugar, modification of the 5, 6, 5-tricyclic and 12-membered macrocyclic lactone part of the compds. naturally produced or of the pseudo-aglycon of the natural compds. Thus, 2'-O-trifluoroacetyl sponosyn Q was prepared and tested as a control of Stomoxys calcitrans (stable fly) and Phormia regina (blow fly) with 100% of ASF killed at 100 ppm.

IC ICM C07H017-08
ICS A01N043-22; C07D407-12; C07D313-00

CC 33-7 (Carbohydrates)
Section cross-reference(s): 5, 34

IT 35954-65-5P 56709-66-1P 131929-56-1P 131929-57-2P 149439-79-2P
159059-20-8P 159059-21-9P 186352-03-4P 187170-26-9P 187170-27-0P
187170-29-2P 187170-31-6P 187170-34-9P 187170-36-1P 187170-37-2P
187170-38-3P 187170-39-4P 187170-40-7P 187170-41-8P 187170-44-1P
187170-45-2P 187170-46-3P 187170-47-4P 187170-50-9P 187170-51-0P
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187170-64-5P 187170-65-6P 187170-66-7P 187170-67-8P 187170-68-9P
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187171-04-6P 187171-05-7P 187171-06-8P 187171-07-9P 187171-08-0P
187171-09-1P 187171-10-4P 187171-11-5P 187171-12-6P 187171-14-8P
187171-15-9P 187171-16-0P 187171-18-2P 187171-23-9P 187171-26-2P
187171-31-9P 187171-33-1P 187171-36-4P 187171-38-6P 187171-44-4P
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187171-57-9P 187171-60-4P 187171-62-6P 187171-65-9P 187171-68-2P
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187171-80-8P 187171-82-0P 187171-84-2P 187171-88-6P 187171-92-2P
187171-93-3P 187171-94-4P 187171-95-5P **187171-96-6P**
187172-05-0P 187172-08-3P 187172-22-1P 187172-43-6P 187172-45-8P
187172-47-0P 187172-48-1P 187172-50-5P 187172-52-7P 187172-57-2P
187172-59-4P 187172-62-9P 187172-66-3P **187172-67-4P**
187172-69-6P 187172-71-0P

RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of spinosyn macrocyclic lactone aminodeox glycosides as insecticides and miticides)

IT **187171-96-6P 187172-67-4P**

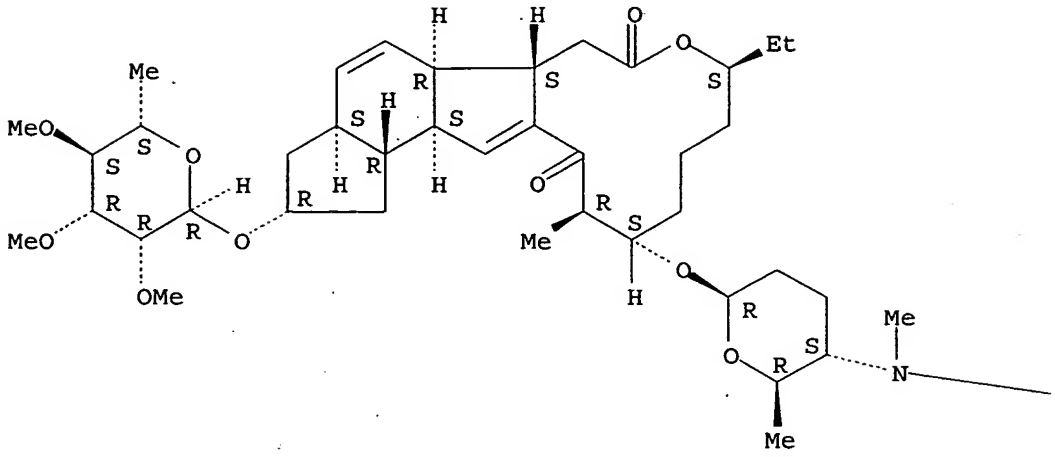
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of spinosyn macrocyclic lactone aminodeox glycosides as insecticides and miticides)

RN 187171-96-6 HCAPLUS

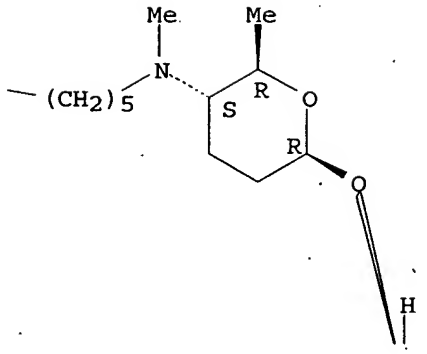
CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 13,13'-[1,5-pentanediylbis[(methylimino)[(2R,5S,6R)-tetrahydro-6-methyl-2H-pyran-5,2-diyl]oxy]]bis[2-[(6-deoxy-2,3,4-tri-O-methyl-α-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,2'R,3aS,3'aS,5aR,5'aR,5bS,5'bS,9S,9'S,13S,13'S,14R,14'R,16aS,16'aS,16bR,16'bR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

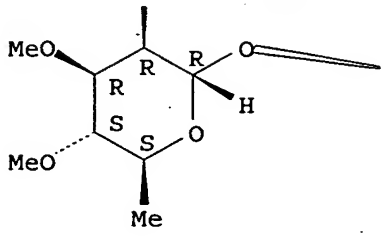
PAGE 1-A



PAGE 1-B



PAGE 2-A



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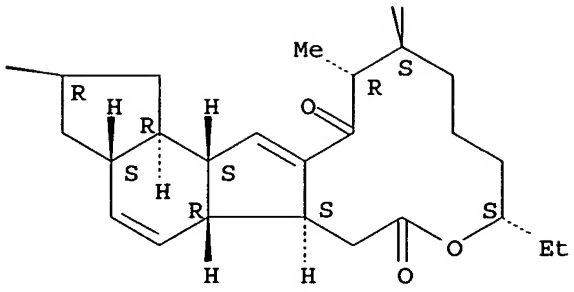
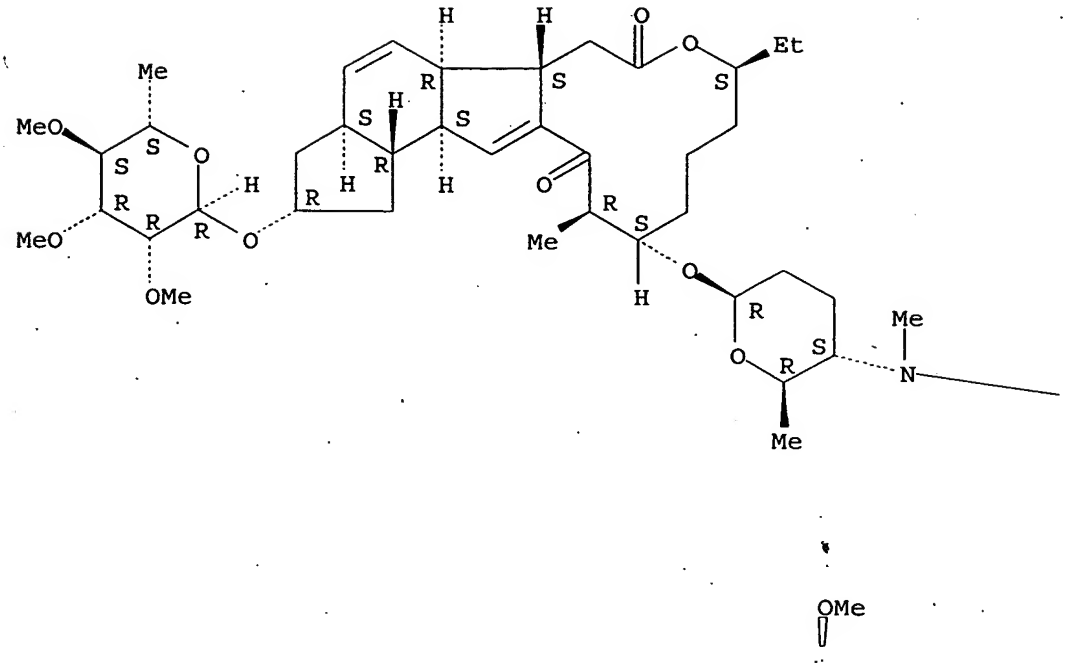


RN 187172-67-4 HCAPLUS

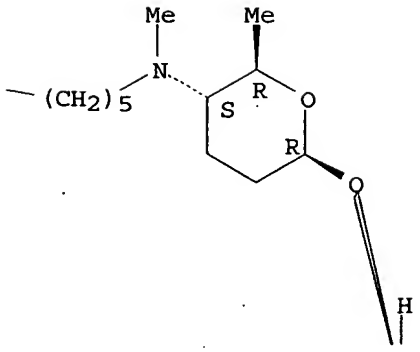
CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 13,13'-[1,5-pentanediylbis[(methylimino)[(2R,5S,6R)-tetrahydro-6-methyl-2H-pyran-5,2-diyl]oxy]]bis[2-[(6-deoxy-2,3,4-tri-O-methyl-α-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, monohydrobromide, [2R-[2R*,3aS*,5aR*,5bS*,9S*,13S*(2'R*,3'aS*,5'aR*,5'bS*,9'S*,13'S*,14'R*,16'aS*,16'bR*),14R*,16aS*,16bR*]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

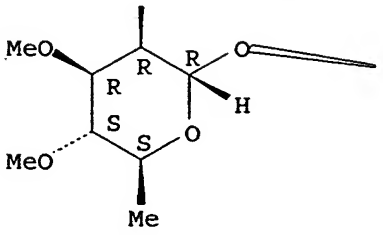
PAGE 1-A



PAGE 1-B

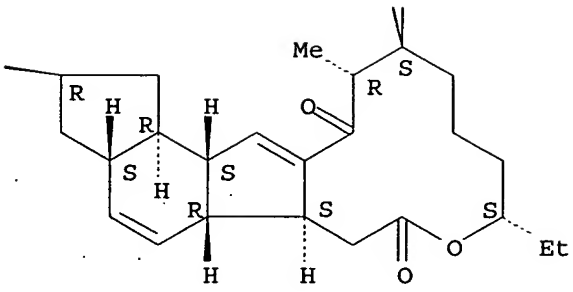


PAGE 2-A



● HBr

PAGE 2-B



L24 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:938167 HCAPLUS
DOCUMENT NUMBER: 123:344236
TITLE: Polyhydroxy diamines and their use in detergent compositions
INVENTOR(S): Scheibel, Jeffrey John; Connor, Daniel Stedman; Fu, Yi-Chang; Bodet, Jean-Francois; Brown, Lesley Alexandra; Vinson, Philip Kyle; Reilman, Randall Thomas
PATENT ASSIGNEE(S): Procter and Gamble Co., USA
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9519951	A1	19950727	WO 1995-US769	19950120
W: CA, CN, JP, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2181797	AA	19950727	CA 1995-2181797	19950120
EP 741691	A1	19961113	EP 1995-908588	19950120
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
CN 1142221	A	19970205	CN 1995-191880	19950120

JP 09508122	T2	19970819	JP 1995-519661		19950120
US 5669984	A	19970923	US 1995-576265		19951221
PRIORITY APPLN. INFO.:			US 1994-187250	A	19940125
			US 1994-357645	A	19941222
			WO 1995-US769	W	19950120

AB X(NZR)(NZ1R1) (I; X = group having from 2 to 200 atoms; Z, Z1 = group containing ≥1 OH substituent; R, R1 = H, (substituted) alkyl, aryl, or alkylaryl) are useful in laundry, cleaning, and personal-care compns. A typical I was manufactured by reductive amination of glucose with ethylenediamine. at 70-120°.

IC ICM C07C215-14
ICS C11D003-30

CC 46-6 (Surface Active Agents and Detergents)

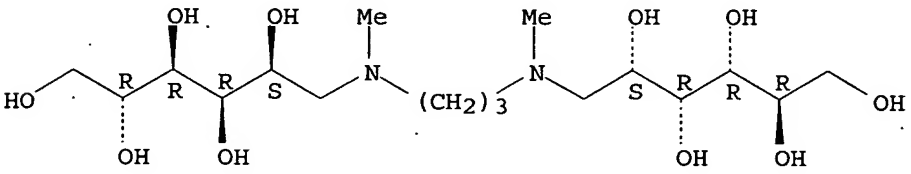
IT 112-57-2DP, Tetraethylenepentamine, reaction products with maltodextrin 9050-36-6DP, Maltodextrin, reaction products with tetraethylenepentamine 87157-57-1P 170695-52-0P **170695-53-1P** 170695-54-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyhydroxy diamines for detergents)

IT **170695-53-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyhydroxy diamines for detergents)

RN 170695-53-1 HCAPLUS

CN D-Glucitol, 1,1'-[1,3-propanediylbis(methylimino)]bis[1-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L24 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN

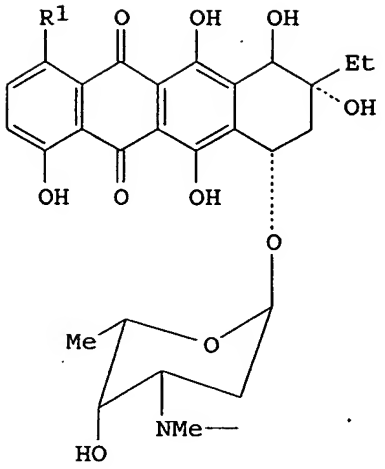
ACCESSION NUMBER:	1991:164710 HCAPLUS
DOCUMENT NUMBER:	114:164710
TITLE:	Preparation of rhodomycin dimers as cytostatic agents
INVENTOR(S):	Hermentin, Peter; Raab, Ernst; Hoffmann, Dieter; Kraemer, Hans Peter
PATENT ASSIGNEE(S):	Behringwerke A.-G., Germany
SOURCE:	Ger. Offen., 11 pp. CODEN: GWXXBX
DOCUMENT TYPE:	Patent
LANGUAGE:	German
FAMILY ACC. NUM. COUNT:	1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3913759	A1	19901031	DE 1989-3913759	19890426
PRIORITY APPLN. INFO.:			DE 1989-3913759	19890426

OTHER SOURCE(S): MARPAT 114:164710

GI

Q= 

AB R2X (R = Q; R1 = H, OH; X = NM-, O-, or CO-interrupted aliphatic spacer ≤5 nm in length) were prepared Thus, QH (R1 = H) (I) underwent reductive condensation with ClCH2CHO and the product condensed with I to give QCH2CH2Q (R1 = H) which had IC50 of <0.004 μg/mL against leukemia L1210 cell growth in vitro.

IC ICM A61K031-70
ICS A61K031-65

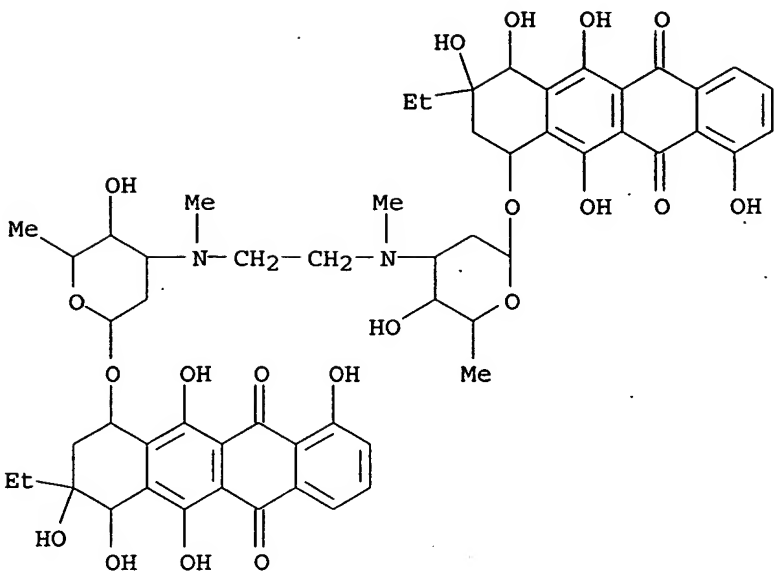
CC 33-7 (Carbohydrates)
Section cross-reference(s): 1

IT **133001-78-2P 133001-79-3P 133001-80-6P**
133001-81-7P 133001-82-8P 133001-83-9P 133024-94-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as cytostatic agent)

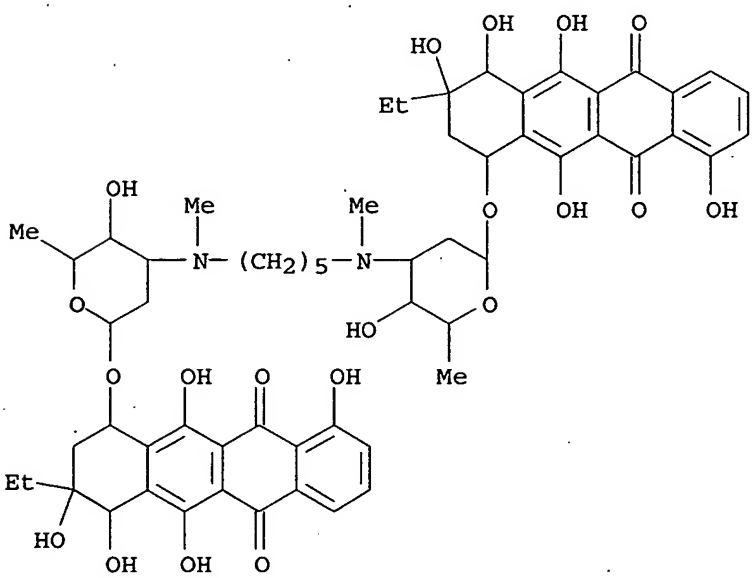
IT **133001-78-2P 133001-79-3P 133001-80-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as cytostatic agent)

RN 133001-78-2 HCAPLUS

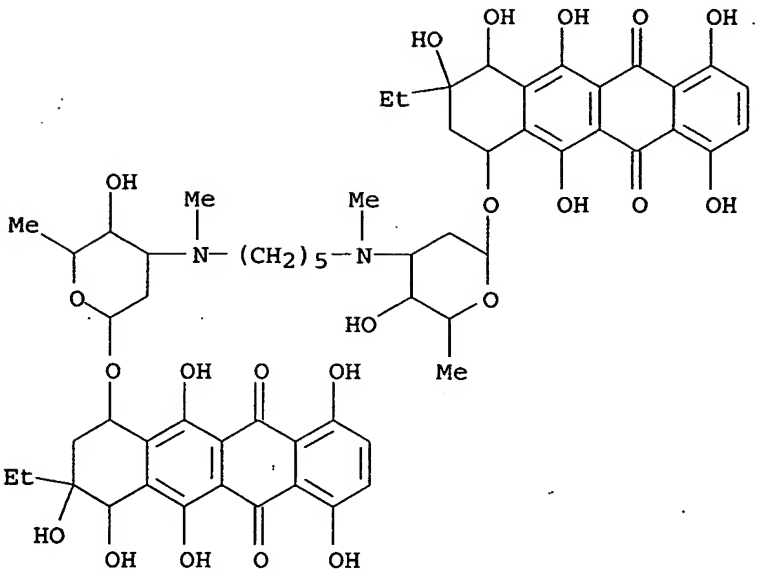
CN α-L-lyxo-Hexopyranoside, 3,3'-[1,2-ethanediylbis(methylimino)]bis[3-ethyl-1,2,3,4,6,11-hexahydro-3,4,5,10,12-pentahydroxy-6,11-dioxo-1-naphthacenyl 2,3,6-trideoxy-, [1S-[1α(1R*,3S*,4S*),3α,4β]]- (9CI) (CA INDEX NAME)



RN 133001-79-3 HCAPLUS
CN α-L-lyxo-Hexopyranoside, 3,3'-[1,5-pentanediylbis(methylimino)]bis[3-ethyl-1,2,3,4,6,11-hexahydro-3,4,5,10,12-pentahydroxy-6,11-dioxo-1-naphthacenyl 2,3,6-trideoxy-, [1S-[1α(1R*,3S*,4S*),3α,4β]]- (9CI) (CA INDEX NAME)



RN 133001-80-6 HCAPLUS
CN α-L-lyxo-Hexopyranoside, 3,3'-[1,5-pentanediylbis(methylimino)]bis[3-ethyl-1,2,3,4,6,11-hexahydro-3,4,5,7,10,12-hexahydroxy-6,11-dioxo-1-naphthacenyl 2,3,6-trideoxy-, [1S-[1α(1R*,3S*,4S*),3α,4β]]- (9CI) (CA INDEX NAME)



L24 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1981:16011 HCAPLUS
DOCUMENT NUMBER: 94:16011
TITLE: Surfactants based on N-methyl-D-glucamine
AUTHOR(S): Veksler, V. I.; Kovalenko, L. N.; Sergeeva, N. I.
CORPORATE SOURCE: Inst. Sov. Torg., Leningrad, USSR
SOURCE: Zhurnal Obshchei Khimii (1980), 50(9), 2120-3
CODEN: ZOKHA4; ISSN: 0044-460X
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The surface-active properties of quaternary ammonium salts of D-sorbitol, e.g., [QNMeRR1]+X- (Q = radical from D-sorbitol, R = Et, Pr, octyl, nonyl, decyl, CH2CO2C6H13, CH2CO2C10H21, CH2CO2Me, R1 = dodecyl, hexadecyl, octadecyl, X- = Br, Cl) and [QMeRNCH2]2+ 2Br- (R = dodecyl, hexadecyl), depend on the structure of the substituents connected to the N atom. A correspondence between the surface-active and bactericidal properties was also found.

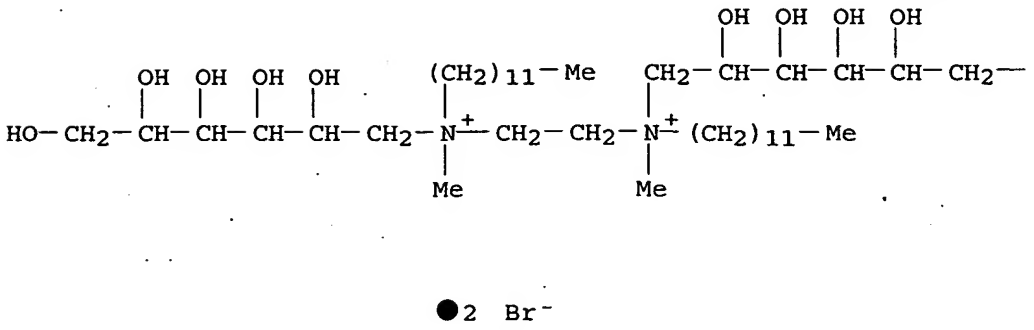
CC 33-5 (Carbohydrates)
Section cross-reference(s): 1

IT 54261-91-5 73458-66-9 73458-67-0 73458-70-5 73458-79-4
73458-80-7 73458-82-9 73458-84-1 73458-86-3 73458-88-5
75869-90-8 75869-91-9 **75883-17-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(surface-active properties of, bactericidal activity in relation to)

IT **75869-90-8** **75883-17-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(surface-active properties of, bactericidal activity in relation to)

RN 75869-90-8 HCAPLUS
CN D-Glucitol, 1,1'-[1,2-ethanediylbis(dodecylmethyliminio)]bis[1-deoxy-, dibromide (9CI) (CA INDEX NAME)

PAGE 1-A



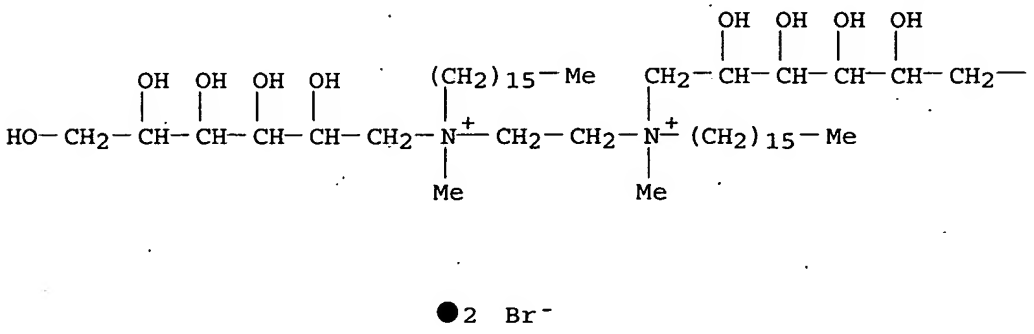
●2 Br⁻

PAGE 1-B

—OH

RN 75883-17-9 HCAPLUS
CN D-Glucitol, 1,1'-[1,2-ethanediylbis(hexadecylmethyliminio)]bis[1-deoxy-, dibromide (9CI) (CA INDEX NAME)

PAGE 1-A



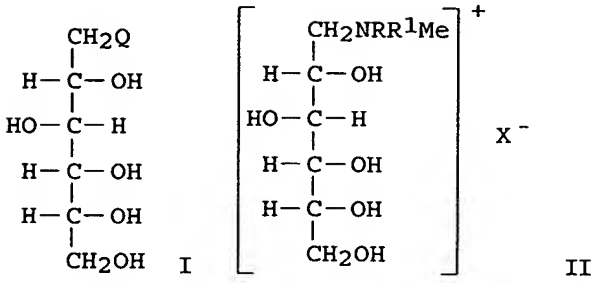
●2 Br⁻

PAGE 1-B

—OH

L24 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1980:181509 HCAPLUS
DOCUMENT NUMBER: 92:181509
TITLE: Synthesis of antimicrobial substances - derivatives of D-sorbitol
AUTHOR(S): Veksler, V. I.; Deeva, V. E.; Kovalenko, L. N.; Markovich, A. V.; Lysenko, E. A.; Sokolov, B. V.; Sokolov, V. D.; Solov'yan, N. A.; Khavin, Z. Ya.; et al.

CORPORATE SOURCE: Leningr. Inst. Sov. Trgovli, Leningrad, USSR
SOURCE: Zhurnal Obshchei Khimii (1979), 49(12), 2731-8
CODEN: ZOKHA4; ISSN: 0044-460X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



I II

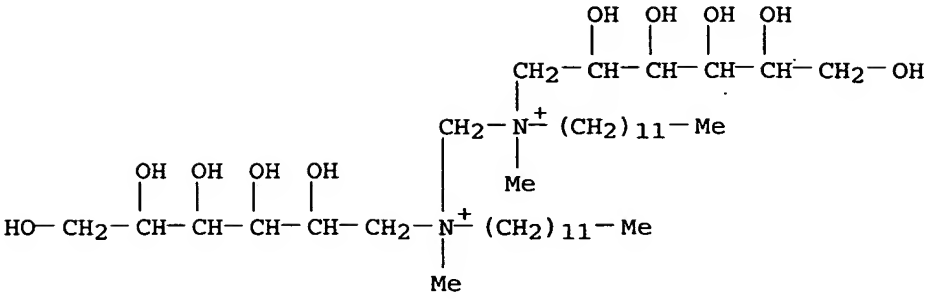
AB Alkylation of N-methyl-D-glucamine (I, Q = MeNH) with RX (R = C18H37, X = Br; R = C12H25, C14H29, C16H33, X = Cl) gave I (Q = MeNR) which were alkylated by R1X [R1 = C1-6, 8-10 alkyl, PhCH2, CH2CO2R2 (R2 = Me, hexyl, octyl, decyl), CH2CONEt2, X = I, Cl, Br, PhSO3] to give quaternary ammonium salts II which were effective against gram-pos. bacteria and exhibited low toxicities in chick embryo tests.

CC 33-5 (Carbohydrates)
Section cross-reference(s): 1

IT 54261-91-5P 54261-92-6P 73458-63-6P 73458-64-7P 73458-65-8P
73458-66-9P 73458-67-0P 73458-68-1P 73458-69-2P 73458-70-5P
73458-71-6P 73458-72-7P 73458-73-8P 73458-74-9P 73458-75-0P
73458-76-1P 73458-78-3P 73458-79-4P 73458-80-7P 73458-81-8P
73458-82-9P 73458-83-0P 73458-84-1P 73458-85-2P 73458-86-3P
73458-87-4P 73458-88-5P **73458-89-6P 73458-90-9P**
73458-91-0P 73469-05-3P 73495-13-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and bactericidal activity of)

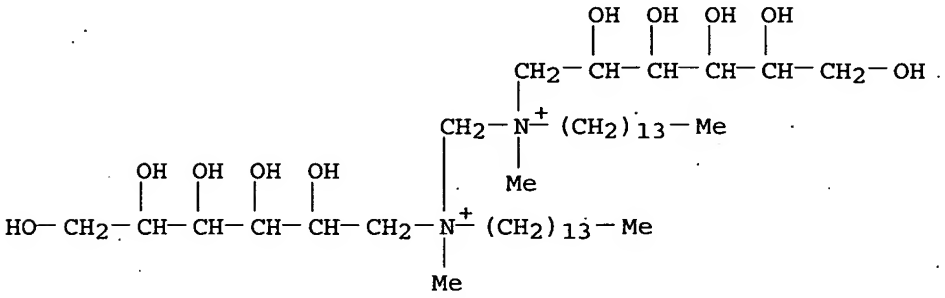
IT **73458-89-6P 73458-90-9P 73458-91-0P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and bactericidal activity of)

RN 73458-89-6 HCAPLUS
CN D-Glucitol, 1,1'-[methylenebis(dodecylmethyliminio)]bis[1-deoxy-, dibromide (9CI) (CA INDEX NAME)



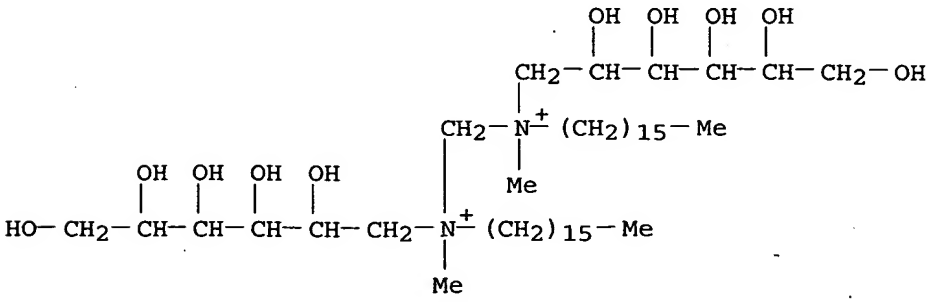
●2 Br^-

RN 73458-90-9 HCAPLUS
CN D-Glucitol, 1,1'-[methylenebis(methyltetradecyliminio)]bis[1-deoxy-, dibromide (9CI) (CA INDEX NAME)



●2 Br^-

RN 73458-91-0 HCAPLUS
CN D-Glucitol, 1,1'-[methylenebis(hexadecylmethyliminio)]bis[1-deoxy-, dibromide (9CI) (CA INDEX NAME)



●2 Br^-

L24 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1966:18724 HCAPLUS
DOCUMENT NUMBER: 64:18724
ORIGINAL REFERENCE NO.: 64:3357b-d
TITLE: Stabilized formaldehyde solutions
INVENTOR(S): Butter, George N.
PATENT ASSIGNEE(S): Commercial Solvents Corp.
SOURCE: 2 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3214475		19651026	US	19620305
GB 1012824			GB	

AB Deposition of HCHO polymer from aqueous solns. is retarded by addition of about 25-250 ppm. of (GNRCO)2R' (I), where R is a lower alkyl radical, R' is an alkylene radical containing at least 5 C atoms, and G is a glycitol radical containing at least 5 C atoms. I can be prepared by condensation of a diacid radical containing not less than 7 C atoms with a glycamine. Thus, to a 1000-ml. portion of 44% HCHO solution containing 1% MeOH was added 1.25 ml. of a MeOH solution containing sufficient bis(N-methylglucatyl)azelylamide (II) to add 50 ppm. II to the HCHO solution This modified solution and a 1000-ml. portion of the 44% aqueous HCHO containing no II were kept at 100°F. for 30 days. At the end of this time, the solution containing II showed only a small amount of solid deposit whereas the other solution was cloudy and contained a great deal of solid. The two solns. were then chilled to 60°F. and solid precipitated in both portions of solution After this, the solns. were heated to 120°F. with agitation. The solid material in the portion containing II substantially disappeared whereas the control solution was not appreciably changed. Other stabilizers shown to be effective were bis(N-methylglucatyl) derivs. of sebacylamide, thapsylamide, and tricontanediylamide, and the bis(N-isopropylglucatyl), bis(N-butygllucatyl), bis(N-methylfructatyl), and bis(N-methylgalactatyl) derivs. of azelylamide.
NCL 260606000
CC 33 (Aliphatic Compounds)
IT **5921-68-6**, Decanediamide, N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)-N,N-dimethyl- 7181-03-5, Triacontanediamide, N,N'-dimethyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)- 7181-04-6, Nonanediamide, N,N'-diisopropyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)- 7181-05-7, Nonanediamide, N,N'-dibutyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)- 7181-06-8, Hexadecanediamide, N,N'-dimethyl-N,N'-bis- (gluco-2,3,4,5,6-pentahydroxyhexyl)- 7181-07-9, Decanediamide, N,N'-dimethyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)- 7181-08-0, Nonanediamide, N,N'-dimethyl-N,N'-bis(arabino-2,3,4,5-tetrahydroxypentyl)- 7181-09-1, Nonanediamide, N,N'-dimethyl-N,N'-bis(galacto-2,3,4,5,6-pentahydroxyhexyl)- 7195-85-9, Nonanediamide, N,N'-dimethyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)- 7412-70-6, Octanediamide, N,N'-dimethyl-N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)-
(formaldehyde solution stabilization by)
IT **5921-68-6**, Decanediamide, N,N'-bis(gluco-2,3,4,5,6-

pentahydroxyhexyl)-N,N-dimethyl-
(formaldehyde solution stabilization by)
RN 5921-68-6 HCAPLUS
CN Decanediamide, N,N'-bis(gluco-2,3,4,5,6-pentahydroxyhexyl)-N,N-dimethyl-
(8CI) (CA INDEX NAME)

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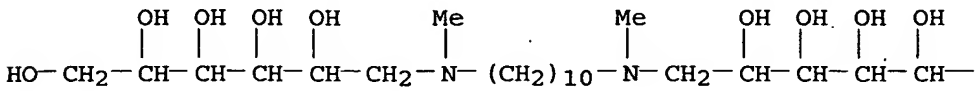

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L24 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1958:6586 HCAPLUS
DOCUMENT NUMBER: 52:6586
ORIGINAL REFERENCE NO.: 52:1217b-d
TITLE: Dihexitylamines and their functional derivatives
INVENTOR(S): Zech, John D.
PATENT ASSIGNEE(S): Atlas Powder Co.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2802821		19570813	US	

AB A process is described for the preparation of new compds. containing two substituted secondary hexitylamine radicals and their functional derivs. Thus, 195 g. methylglucamine, 64 g. 1,4-dichlorobutane, 300 ml. H2O, and 84 g. NaHCO3 was refluxed 17 hrs., H2O distilled to a final temperature of 143° at 5 mm., the residue dissolved in 250 ml. MeOH and filtered, and 235 g. 1,4-bis(N-methylglucamino)butane recovered from the filtrate by evaporation Similarly prepared were
1,3-bis(N-methylglucamino)-2-hydroxypropane,
1,2-bis(N-methylglucamino)ethane, 2,2'-bis(N-methylglucamino)diethyl ether, 3,3'-bis(N-methylglucamino)-2,2'-dihydroxydipropyl ether. Because of reactive groups in the above compds., esters, ethers, and quaternary compds. may be formed which are useful as surface-active agents, corrosion inhibitors, textile assistants, detergents, etc. Cf. C.A. 51, 18705a.
CC 10 (Organic Chemistry)
IT **109505-50-2**, Sorbitol, 1,1'-[ethylenebis(methylimino)]bis[1-deoxy-
109966-73-6, Sorbitol, 1,1'-[tetramethylenebis(methylimino)]bis[1-deoxy- 110055-55-5, Sorbitol, 1,1'-[(2-hydroxytrimethylene)bis(methylimino)]bis[1-deoxy- 114329-72-5, Sorbitol, 1,1'-[oxybis[ethylene(methylimino)]]bis[1-deoxy- 117123-18-9, Sorbitol, 1,1'-[oxybis[(2-hydroxytrimethylene)(methylimino)]]bis[1-deoxy-
(preparation of)

IT **109505-50-2**, Sorbitol, 1,1'-[ethylenebis(methylimino)]bis[1-deoxy-
109966-73-6, Sorbitol, 1,1'-[tetramethylenebis(methylimino)]bis[1-deoxy-
(preparation of)

RN 109505-50-2 HCAPLUS

CN Sorbitol, 1,1'-[ethylenebis(methylimino)]bis[1-deoxy- (6CI) (CA INDEX NAME)

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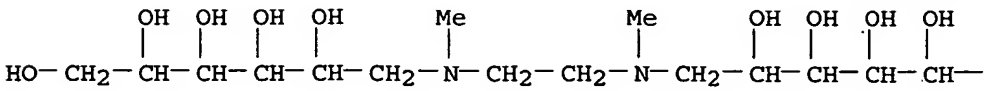

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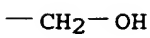

RN 109966-73-6 HCAPLUS

CN Sorbitol, 1,1'-[tetramethylenebis(methylimino)]bis[1-deoxy- (6CI) (CA INDEX NAME)

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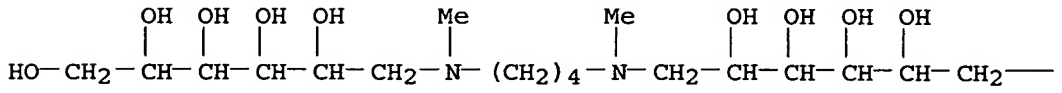

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